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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,977	12/30/2003	Angel Stoyanov	25339	8820
28624	7590	07/28/2005	EXAMINER	
WEYERHAEUSER COMPANY			WHITE, EVERETT NMN	
INTELLECTUAL PROPERTY DEPT., CH 1J27			ART UNIT	
P.O. BOX 9777			PAPER NUMBER	
FEDERAL WAY, WA 98063			1623	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/748,977

Applicant(s)

STOYANOV ET AL.

Examiner

EVERETT WHITE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Dec. 30, 2003.

- 4) Interview Summary (PTO-413)

Paper No(s)/Mail Date. \_\_\_\_.

- 5) Notice of Informal Patent Application (PTO-152)

- 6) Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Objections***

1. Claim 3 (2<sup>nd</sup> occurrence) is objected to because of the following informalities: The numbered "3" has been used to number two consecutive claims. Starting with the 2<sup>nd</sup> claim that has been numbered 3, the claims numbered 3 to 13 should be renumbered 4 to 14 and the claim numbers recited in each of the dependent renumbered claims should also be corrected. Appropriate correction is required.
  
2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 3 (2<sup>nd</sup> occurrence) to 13 should be renumbered 4 to 14.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
  
4. Claims 3, 3(2<sup>nd</sup> occurrence), and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There are two consecutive numbered "3" claims which renders the claims indefinite.

Claim 12 appears to be incomplete since the subject matter recited therein does not further limit subject matter already set forth in Claim 1, which Claim 12 is dependent from.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al (US Patent No. 5,589,256).

Applicants claim a method for forming individualized intrafiber crosslinked cellulosic fibers comprising the steps of: applying an effective amount of a crosslinking agent in the presence of an effective amount of a polyol to a mat of cellulosic fibers, separating the mat into substantially individualized fibers, drying the treated individualized fibers, curing the crosslinking agent in the presence of the polyol to form individualized intrafiber crosslinked cellulosic fibers, wherein the Whiteness Index, (WI<sub>(CDM-L)</sub>), of the individualized intrafiber crosslinked cellulosic fibers is greater than about 69.0. Additional limitations in the dependent claims include the use of specific crosslinking agent in the method selected from the group consisting of malic acid,

tartaric acid, citric acid, tartronic acid,  $\alpha$ -hydroxyglutaric acid, and citramalic acid and mixtures thereof; and the method wherein the polyol is applied to the crosslink treated individualized fibers before curing.

The Hansen et al patent sets forth a description of the overall system (see column 37, 4<sup>th</sup> paragraph) which includes the invention thereof comprising a conveying device for transporting a mat of cellulose fibers or other fibers through a fiber treatment zone; an applicator for applying a treatment substance such as a crosslinking substance from a source thereof to the mat at the fiber treatment zone; a fiberizer for completely separating the individual cellulose fibers comprising the mat to form a fiber output comprised of substantially unbroken cellulose fibers substantially without nits or knots; and a dryer coupled to the fiberizer for flashevaporating residual moisture from the fiber output and for curing the crosslinking substance, thereby forming dried and cured cellulose fibers. In column 38, line lines 35 and 36, Hansen et al discloses that the crosslinking substances can be polycarboxylic acids, such as citric acid, which embraces the polycarboxylic acids cited in the instant claims. The Hansen et al patent also set forth the use of binders being applied to the fibers, wherein the binders may be selected as a combination of a polycarboxylic acid and a polyol (see column 19, line 61). See column 2, lines 2-4, wherein the Hansen et al patent points out that it is well known in the art that crosslinking agents such as polycarboxylic acids form covalent intrafiber bonds with individualized cellulose fibers. The instantly claimed invention differs from the Hansen et al patent by reciting that the Whiteness Index of the individualized intrafiber crosslinked cellulosic fibers is greater than about 69. The Whiteness Index of the products recited in the Hansen et al patent has not been set forth. However, Applicants are reminded that products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada* 15 USPQ 2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01. The instant claims also differ from the Hansen et al patent by reciting specific hydroxyl polycarboxylic acids. However, the starting materials are analogous in that they all are

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hydroxyl polycarboxylic acids. One having ordinary skill in the art would have been motivated to employ the method of the prior art with the expectation of obtaining the desired product because the skilled artisan would have expected the analogous starting materials to react similarly. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of applicant invention to replace the citric acid or tartaric acid used in the method of the Hansen et al patent with a different hydroxyl polycarboxylic acid in view of their closely related structures and the resulting expectation of similar crosslinking properties.

7. Claims 1, 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al (US Patent No. 5,589,256) as applied to Claims 1-4, 12 and 13 above, and further in view of Hansen et al (US Patent No. 5,789,326).

Applicants claim a method for forming individualized intrafiber crosslinked cellulosic fibers comprising the steps of: applying an effective amount of a crosslinking agent in the presence of an effective amount of a polyol to a mat of cellulosic fibers, separating the mat into substantially individualized fibers, drying the treated individualized fibers, curing the crosslinking agent in the presence of the polyol to form individualized intrafiber crosslinked cellulosic fibers, wherein the Whiteness Index, (WI<sub>(CDM-L)</sub>), of the individualized intrafiber crosslinked cellulosic fibers is greater than about 69.0. Additional limitations in the dependent claims include the method of Claim 1 wherein the polyol is acyclic polyols, alicyclic polyols and heterosides and mixtures thereof wherein the alicyclic polyol is selected from the group consisting of erythritol, xylitol, arabinitol, ribitol, sorbitol, mannitol, perseitol, and volemitol and mixtures thereof, and wherein the heteroside is selected from the group consisting of isomalt, lactitol, and maltitol or mixtures thereof.

The information disclosed in the Hansen et al '256 patent in the above rejection of the claims under 35 U.S.C. 103 is incorporated into the instant rejection of the claims. The instant claims differ from the Hansen et al '256 patent by reciting specific polyols, which are not recited in the Hansen et al '256 patent. The Hansen et al '326 patent recites a process for preparing intrafiber crosslinked cellulose fibers, which are

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individualized, crosslinked, dried and cured, as substantially set forth in the Hansen et al '256 patent. However, the Hansen et al '326 patent further sets forth that the polyols thereof may be selected as sorbitol as set forth in instant Claims 6 and 7 (see column 51, line 45). The other polyols recited in the instant claims embraces sorbitol as starting materials in the instantly claimed method since all the alcohols recited in the instant claims as starting materials are polyols. One having ordinary skill in the art would have been motivated to employ the method of the prior art with the expectation of obtaining the desired product because the skilled artisan would have expected the analogous starting materials to react similarly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the polyols used in the method of the Hansen et al '256 patent with sorbitol in view of the recognition in the art, as evidenced by the Hansen et al '326 patent, that use of sorbitol provides sufficient functional groups for forming a hydrogen bond or a coordinate covalent bond.

***Summary***

8. All the claims are rejected.

***Examiner's Telephone Number, Fax Number, and Other Information***

9. For 24 hour access to patent application information 7 days per week, or for filing applications, please visit our website at [www.uspto.gov](http://www.uspto.gov) and click on the button "Patent Electronic Business Center" for more information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is (571) 272-0660. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reached on (571) 272-0661. The fax phone number for this Group is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

*E. White*  
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*James O. Wilson*  
James O. Wilson  
Supervisory Primary Examiner  
**Technology Center 1600**